

Mountaintop Mining/Valley Fill Environmental Impact Statement Technical Study

Work Plan for Economic Impacts of Modifying Mountaintop Mining and Valley Fill Activities in West Virginia Proposed by Dr.'s Tom Witt, Thomas Torries, and David Greenstreet West Virginia University 7/28/99

I. Introduction

To evaluate the economic impact of modifying mountaintop mining and valley fill activities in West Virginia, the Bureau of Business and Economic Research (BBER) and the Division of Resource Management at West Virginia University developed this proposal. The results of the study will forecast how proposed changes in mountaintop mining and valley fill practices could impact the production of coal, the West Virginia coal market, and the West Virginia state economy. The programmatic Environmental Impact Statement (EIS) on mountaintop mining and associated valley fills, which is being prepared by four Federal agencies and the West Virginia Division of Environmental Protection (WVDEP), will incorporate the findings of this study into the overall evaluation of economic impacts and the alternatives analysis.

II. Problem Statement

Mountaintop mining/valley fill (MTM/VF) mining operations are an important part of the southern West Virginia economy. Much concern exists about how changes in policies and guidance regulating MTM/VF activities might impact the cost of coal production and consequently the overall State economy. The programmatic EIS will evaluate a range of possible changes to MTM/VF regulatory requirements and practices. These possible changes will form the basis of the alternatives developed in the EIS. The economic impact of these changes is an important consideration in the overall evaluation of alternatives.

III. Proposed Approach

The following specific tasks were identified:

Task 1: Identify the extent of potential MTM/VF opportunities in southern West Virginia.

The research will use a geographic information system database and the reserve coal valuation model (RCVM) which was developed for the West Virginia Department of Tax and Revenue to generate data on the historical and probable extent of MTM/VF. The resulting data will indicate

the location and recoverable tonnage of coal available for MTM/VF operations in West Virginia. The RCVM has the modeling capabilities of constraining the stock of minable coal due to various restrictions on MTM/VF activity. Restricting coal removed by MTM/VF methods may mean that certain of the affected seams will be mined by some other method or that lost production may be made up through increased production from other West Virginia locations.

A variety of constraints that influence the economic limitations of potentially mined coal can be modeled, such as variable overburden ratios, limitations on valley fills, setbacks from populated areas, and limitations on filling various streams. The model also considers coal prices, coal quality, mining methods, and parameters that indicate coal mining profitability. These modeling capabilities will be used to measure the impact on the stock of coal to be mined by MTM/VF methods under two alternative scenarios which consist of a bundle of moderate and severe modifications as proposed by the federal agencies and the WVDEP for the programmatic EIS.

The research will produce a series of data and maps which provide information on MTM/VF location, tonnage, and economics. The data and maps are necessary for the subsequent tasks. Additionally, estimates of West Virginia severance and property taxes will be provided in Task 1 with input from Task 2.

Task 2: Analyze coal market reactions to modifications to MTM/VF activities in West Virginia.

Modifying or restricting MTM/VF low sulfur coal in West Virginia will reduce the amount of West Virginia coal produced and exported and increase the price of low sulfur coal to West Virginia electric utilities. This task will produce a report that addresses (1) how much of lost MTM/VF production could be competitively obtained from other mines in West Virginia, and (2) how large will be the increase in the costs of coal and of producing electricity in West Virginia. Difficulties in identifying market effects include the identification of alternate sources and production costs of low sulfur coal in West Virginia; the effects of Phase 2 of the Clean Air Act on low sulfur coal prices; the future delivered costs of Power River Basin coal; the effects of interfuel competition; and the cost of using West Virginia high sulfur coal with scrubbers. In addition, changes will occur over time as remaining reserves in West Virginia are depleted.

Task 3: Forecast the direct and indirect impacts on the West Virginia economy of modifications to MTM/VF practices.

Based on the results of Task 2 on the changes in West Virginia mining activity and coal prices, the WVU Bureau of Business and Economic Research (BBER) will estimate the direct and indirect impacts on West Virginia of MTM/VF and various hypothetical modifications in MTM/VF operations. These impacts will include changes in employment, production, industry competitiveness, household incomes, and population. The BBER will run economic simulations of three alternative scenarios, including current conditions, moderate modifications, and severe

modifications. The impact estimates will consist of annual differences in the simulated levels of State economic activity over the period 2001 through 2010.

The BBER has a model that is uniquely suited to estimating these varied indirect economic impacts on the West Virginia economy. REMI is an economic-demographic forecasting and simulation model with thousands of equations and policy variables. REMI includes modules on industry production by sector, employment and labor supply, wage rates, population and migration, government spending and taxes, prices and cost of living, personal income and consumption, investment, and profitability and production costs relative to the nation.

Task 3 requires the following data from Task 2 for each of the three alternative scenarios covering the period from 1997 (i.e. including two years of historical data and an estimate for the present year) through at least 2010:

- C WV coal output in tons
- C WV coal mine employment
- C WV average coal price fob. (prior to shipment)
- C WV average industrial/commercial/residential price of electricity
- C US average industrial/commercial/residential price of electricity.

Additionally, the research will provide estimates of any change between the baseline current conditions and the moderate or severe restrictions in coal sector investment expenditures by category, such as construction, equipment and mine development.

IV. Projected Timeline and Costs

The table shows the sequence and timing requirements for the three task in terms of weeks of calendar time required. The three tasks require a total of 30 weeks to complete a draft report for public comment and an additional one calendar week to produce a final report after receiving comments. The critical date is April 1, 2000 when a draft report for public review must be completed and submitted for inclusion in the draft programmatic EIS.

Calendar Weeks Required to Complete Tasks 1,2, and 3

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	X	X	X	X	X	X					X																			
2						X	X	X	X	X																				
3											X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Significant Milestones and Deliverables

Task	Completion Date	Deliverable	Cost
Task 1A	4 weeks after work plan approval	Data and maps for baseline, moderate, and severe alternatives	\$45,000
Task 1B	1 week after Task 2	Coal severance and property taxes	Included in 1A and Task 2
Task 2	5 weeks after Task 1A	Coal prices, production costs, employment, and investment	\$45,000
Task 3	20 weeks after Task 2	Draft report on economic impact of alternatives based on moderate and severe modifications	\$95,000
Final Report	13 weeks after receiving public comments on draft report	Final Report	Included in Task 3

The total cost of the study is \$185,000.